

## ABSTRACT

It is intended to provide a method of chemically synthesizing an aminoacyl tRNA which is completely different from the existing methods, namely, a highly efficient and practically usable method for synthesizing an aminoacyl tRNA whereby any nonnatural amino acid can be conveniently aminoacylated without a need for genetic engineering techniques and detected without resort to a radioactive isotope.

The above-described aminoacylation method comprises enclosing a tRNA and an amino acid in the vicinity of the micelle-water interface and bringing them close to each other to thereby react the same, or providing between them a peptide nucleic acid specifically binding to the tRNA as an antisense molecule and bringing them close to each other to thereby react the same.